Claims

1. A polypeptide comprising a sequence selected from:

(i) ILLWQPIPV (PAP.135),

(ii) a derivative sequence of the PAP.135 amino acid sequence having one or more amino acid deletions, additions, or substitutions, and

(iii) a fragment of the PAP.135 (i) or the derivative amino acid sequence (ii);

wherein the polypeptide has HLA class-I restricted activity.

2. A polypeptide comprising a sequence selected from:

(i) CPRFQELESETLKSE (PAP.161),

(ii) a derivative sequence of the PAP.161 amino acid sequence having one or more amino acid deletions, additions or substitutions, and

(iii) a fragment of the PAP.161 (i) or the derivative amino acid sequence (ii);

wherein the polypeptide has HLA class-II restricted activity.

3. An isolated mammalian nucleic acid molecule selected from the group consisting of:

(a) Nucleic acid molecules encoding a polypeptide having the amino acid sequence depicted according to claim 1 or claim 2; and

(b) Nucleic acid molecules, the complementary strand of which specifically hybridises to a nucleic acid molecule in (a).

4. A vector comprising a nucleic acid molecule according to claim 3.

5. A host cell comprising a vector according to claim 4.

6. A monoclonal antibody capable of specifically binding to a polypeptide according to claims 1 or 2.

7. The use of an isolated nucleic acid molecule comprising a sequence according to claim 3 to detect or monitor cancer.

8. Use of nucleic acid probe which is capable of specifically hybridising an isolated nucleic acid molecule according to claim 3 to detect or monitor cancer.

9. A method of detecting or monitoring cancer comprising the step of detecting or monitoring elevated levels of a nucleic acid molecule comprising a sequence according to claim 3 in a sample from a patient.

10. A method of detecting or monitoring cancer comprising the use of a nucleic acid molecule or probe according to claim 8 or claim 9 in combination with a reverse transcription polymerase chain reaction (RT-PCR).

11. A method of detecting or monitoring cancer comprising detecting or monitoring elevated levels of a polypeptide according to any of claims 1 or 2.

12. A method according to claim 11 comprising the use of an antibody selective for a polypeptide as defined in any of claims 1 or 2 to detect the protein or peptide.

13. A method according to claim 12 comprising the use of an Enzyme-Linked Immunosorbant Assay (ELISA).

14. Use or method according to any one of claims 8 to 13, wherein the cancer is a prostate cancer.

15. A kit for use with a method according to any one of claims 9 to 14 comprising a nucleic acid or polypeptide, or an antibody as defined in any one of claims 1 to 3 or 6.

16. A method of prophylaxis or treatment of cancer comprising administering to a patient a pharmaceutically effective amount of nucleic acid molecule comprising a nucleic acid sequence according to claim 3 or a pharmaceutically effective fragment thereof.

17. A method of prophylaxis or treatment of cancer comprising administering to a patient a pharmaceutically effective amount of a nucleic acid molecule hybridisable under high stringency conditions to a nucleic acid molecule comprising a nucleic acid sequence according to claim 3 or a pharmaceutically effective fragment thereof.

18. A method of prophylaxis or treatment of cancer comprising administering to a patient a pharmaceutically effective amount of a polypeptide as defined in any of claims 1 or 2 or a pharmaceutically effective fragment thereof.

19. A method of prophylaxis or treatment of cancer comprising the step of administering to a patient a pharmaceutically effective amount of an antibody according to claim 6.

20. A method according to any one of claims 16 to 19, wherein the cancer is a prostate cancer.

21. A vaccine comprising a nucleic acid molecule having a nucleic acid sequence as defined in claim 3 or a pharmaceutically effective fragment thereof and a pharmaceutically acceptable carrier.

22. A polypeptide comprising a carrier which is not PAP or another fragment of PAP, covalently attached to a polypeptide according to claim 1 or claim 2 pharmaceutically effective fragment thereof.

23. A nucleic acid molecule encoding a polypeptide according to claim 22.

24. A vaccine comprising a polypeptide according to any of claims 1, 2 or 22 or a pharmaceutically effective fragment thereof which may be optionally attached to an immunogen which is not PAP or another fragment of PAP, and a pharmaceutically acceptable carrier.